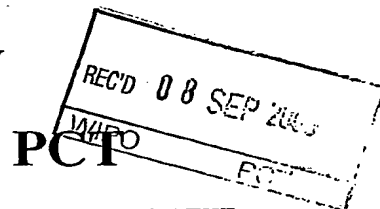


PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
RICHARD AUCHTERLONIE
10022 BRIAR DRIVE
HOUSTON, TX 77042



WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference AUCH.0010		Date of mailing (day/month/year) 06 SEP 2006
FOR FURTHER ACTION See paragraph 2 below		
International application No. PCT/US05/09723	International filing date (day/month/year) 23 March 2005 (23.03.2005)	Priority date (day/month/year) 24 March 2004 (24.03.2004)
International Patent Classification (IPC) or both national classification and IPC IPC: H01J 7/24(2006.01),17/36(2006.01);H05B 31/26(2006.01),41/00(2006.01) USPC: 315/111.21-111.71,340,344,348		
Applicant AUCHTERLONIE, RICHARD		

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Date of completion of this opinion 26 June 2006 (26.06.2006)	Authorized officer Leith A. Al-Nazer Telephone No. 703-308-1782
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------	------------------------------------------------------------------------------

Form PCT/ISA/237 (cover sheet) (April 2005)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US05/09723

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
☐ filed together with the international application in electronic form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US05/09723

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims 6-15 YES
Claims 1-5 and 16-25 NO

Inventive step (IS)

Claims 6-15 YES
Claims 1-5 and 16-25 NO

Industrial applicability (IA)

Claims 1-25 YES
Claims NONE NO

2. Citations and explanations:

Please See Continuation Sheet

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US05/09723

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the questions whether the claims are fully supported by the description, are made:

Claim 4 is objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claim 4 is indefinite for the following reason(s):

Claim 4 recites "the second current path" in lines 2-3. There is a lack of antecedent basis for this limitation in the claim.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US05/09723

Supplemental Box
In case the space in any of the preceding boxes is not sufficient.

V. 2. Citations and Explanations:

Claims 1-5 and 16-25 lack novelty under PCT Article 33(2) as being anticipated by U.S. Patent No. 4,812,715 to Mendel. With respect to claims 1-5 and 16-25, Mendel teaches a pulsed power system for supplying pulsed power to a load, the pulsed power system comprising an inductive energy storage circuit including a current source and a plasma opening switch (7; figure 1), the plasma opening switch having a transmission line coupling the current source to the load for supplying current to the load (figure 1), the transmission line extending away from a first region toward a second region near the load (figure 1), the plasma opening switch having a closed state and an open state (figure 1), the plasma opening switch changing from the closed state to the open state when a plasma discharge in the plasma opening switch is driven by magnetic force from the first region toward the second region (figure 1); wherein the pulsed power system includes electrical conductors (18; figure 1) arranged for providing a stabilizing magnetic field configuration in the first region to magnetically latch the plasma discharge in the first region during charging of the inductive energy storage circuit with current from the current source (figure 1), and current flowing along the transmission line from the current source to the load tends to disrupt the stabilizing magnetic field configuration and unlatch the plasma discharge from the first region and drive the plasma discharge toward the second region (figure 1).

Claims 1-5 and 16-25 lack novelty under PCT Article 33(2) as being anticipated by U.S. Patent No. 6,304,042 to Savage et al. With respect to claims 1-5 and 16-25, Savage teaches a pulsed power system for supplying pulsed power to a load, the pulsed power system comprising an inductive energy storage circuit including a current source and a plasma opening switch (figure 2), the plasma opening switch having a transmission line ("anode and cathode"; figures 1 and 2) coupling the current source to the load for supplying current to the load, the transmission line extending away from a first region toward a second region near the load (figures 1 and 2), the plasma opening switch having a closed state and an open state, the plasma opening switch changing from the closed state to the open state when a plasma discharge in the plasma opening switch is driven by magnetic force from the first region toward the second region (column 4, lines 45-60); wherein the pulsed power system includes electrical conductors (20 and 22; figures 1 and 2) arranged for providing a stabilizing magnetic field configuration in the first region to magnetically latch the plasma discharge in the first region during charging of the inductive energy storage circuit with current from the current source (figures 1 and 2; column 4, lines 45-60), and current flowing along the transmission line from the current source to the load tends to disrupt the stabilizing magnetic field configuration and unlatch the plasma discharge from the first region and drive the plasma discharge toward the second

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US05/09723

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

region (figures 1 and 2; column 4, lines 45-60).

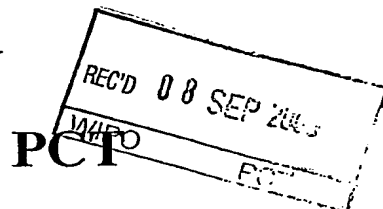
Claims 6-15 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest one or more of the elements recited in dependent claim 6. Specifically, the prior art of record does not teach or suggest the electrical conductors arranged for providing the stabilizing magnetic field configuration including at least one electrical conductor in a first current path for carrying a first current component tending to magnetically force the plasma discharge toward the second region when the plasma discharge is in the first region, and at least one electrical conductor in a second current path for carrying a second current component tending to magnetically force the plasma discharge away from the second region when the plasma discharge is in the first region.

Claims 1-25 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
RICHARD AUCHTERLONIE
10022 BRIAR DRIVE
HOUSTON, TX 77042



WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year) 06 SEP 2006		
Applicant's or agent's file reference AUCH.0010		
FOR FURTHER ACTION See paragraph 2 below		
International application No. PCT/US05/09723	International filing date (day/month/year) 23 March 2005 (23.03.2005)	Priority date (day/month/year) 24 March 2004 (24.03.2004)
International Patent Classification (IPC) or both national classification and IPC IPC: H01J 7/24(2006.01),17/36(2006.01);H05B 31/26(2006.01),41/00(2006.01) USPC: 315/111.21-111.71,340,344,348		
Applicant AUCHTERLONIE, RICHARD		

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Date of completion of this opinion 26 June 2006 (26.06.2006)	Authorized officer Leith A. Al-Nazer Telephone No. 703-308-1782
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------	------------------------------------------------------------------------------

Form PCT/ISA/237 (cover sheet) (April 2005)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US05/09723

Box No. 1 Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
☐ filed together with the international application in electronic form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US05/09723

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims 6-15 YES
Claims 1-5 and 16-25 NO

Inventive step (IS)

Claims 6-15 YES
Claims 1-5 and 16-25 NO

Industrial applicability (IA)

Claims 1-25 YES
Claims NONE NO

2. Citations and explanations:

Please See Continuation Sheet

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US05/09723

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the questions whether the claims are fully supported by the description, are made:

Claim 4 is objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claim 4 is indefinite for the following reason(s):

Claim 4 recites "the second current path" in lines 2-3. There is a lack of antecedent basis for this limitation in the claim.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US05/09723

Supplemental Box
In case the space in any of the preceding boxes is not sufficient.

V. 2. Citations and Explanations:

Claims 1-5 and 16-25 lack novelty under PCT Article 33(2) as being anticipated by U.S. Patent No. 4,812,715 to Mendel. With respect to claims 1-5 and 16-25, Mendel teaches a pulsed power system for supplying pulsed power to a load, the pulsed power system comprising an inductive energy storage circuit including a current source and a plasma opening switch (7; figure 1), the plasma opening switch having a transmission line coupling the current source to the load for supplying current to the load (figure 1). the transmission line extending away from a first region toward a second region near the load (figure 1), the plasma opening switch having a closed state and an open state (figure 1), the plasma opening switch changing from the closed state to the open state when a plasma discharge in the plasma opening switch is driven by magnetic force from the first region toward the second region (figure 1); wherein the pulsed power system includes electrical conductors (18; figure 1) arranged for providing a stabilizing magnetic field configuration in the first region to magnetically latch the plasma discharge in the first region during charging of the inductive energy storage circuit with current from the current source (figure 1), and current flowing along the transmission line from the current source to the load tends to disrupt the stabilizing magnetic field configuration and unlatch the plasma discharge from the first region and drive the plasma discharge toward the second region (figure 1).

Claims 1-5 and 16-25 lack novelty under PCT Article 33(2) as being anticipated by U.S. Patent No. 6,304,042 to Savage et al.

With respect to claims 1-5 and 16-25, Savage teaches a pulsed power system for supplying pulsed power to a load, the pulsed power system comprising an inductive energy storage circuit including a current source and a plasma opening switch (figure 2), the plasma opening switch having a transmission line ("anode and cathode"; figures 1 and 2) coupling the current source to the load for supplying current to the load, the transmission line extending away from a first region toward a second region near the load (figures 1 and 2), the plasma opening switch having a closed state and an open state, the plasma opening switch changing from the closed state to the open state when a plasma discharge in the plasma opening switch is driven by magnetic force from the first region toward the second region (column 4, lines 45-60); wherein the pulsed power system includes electrical conductors (20 and 22; figures 1 and 2) arranged for providing a stabilizing magnetic field configuration in the first region to magnetically latch the plasma discharge in the first region during charging of the inductive energy storage circuit with current from the current source (figures 1 and 2; column 4, lines 45-60), and current flowing along the transmission line from the current source to the load tends to disrupt the stabilizing magnetic field configuration and unlatch the plasma discharge from the first region and drive the plasma discharge toward the second

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US05/09723

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

region (figures 1 and 2; column 4, lines 45-60).

Claims 6-15 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest one or more of the elements recited in dependent claim 6. Specifically, the prior art of record does not teach or suggest the electrical conductors arranged for providing the stabilizing magnetic field configuration including at least one electrical conductor in a first current path for carrying a first current component tending to magnetically force the plasma discharge toward the second region when the plasma discharge is in the first region, and at least one electrical conductor in a second current path for carrying a second current component tending to magnetically force the plasma discharge away from the second region when the plasma discharge is in the first region.

Claims 1-25 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.